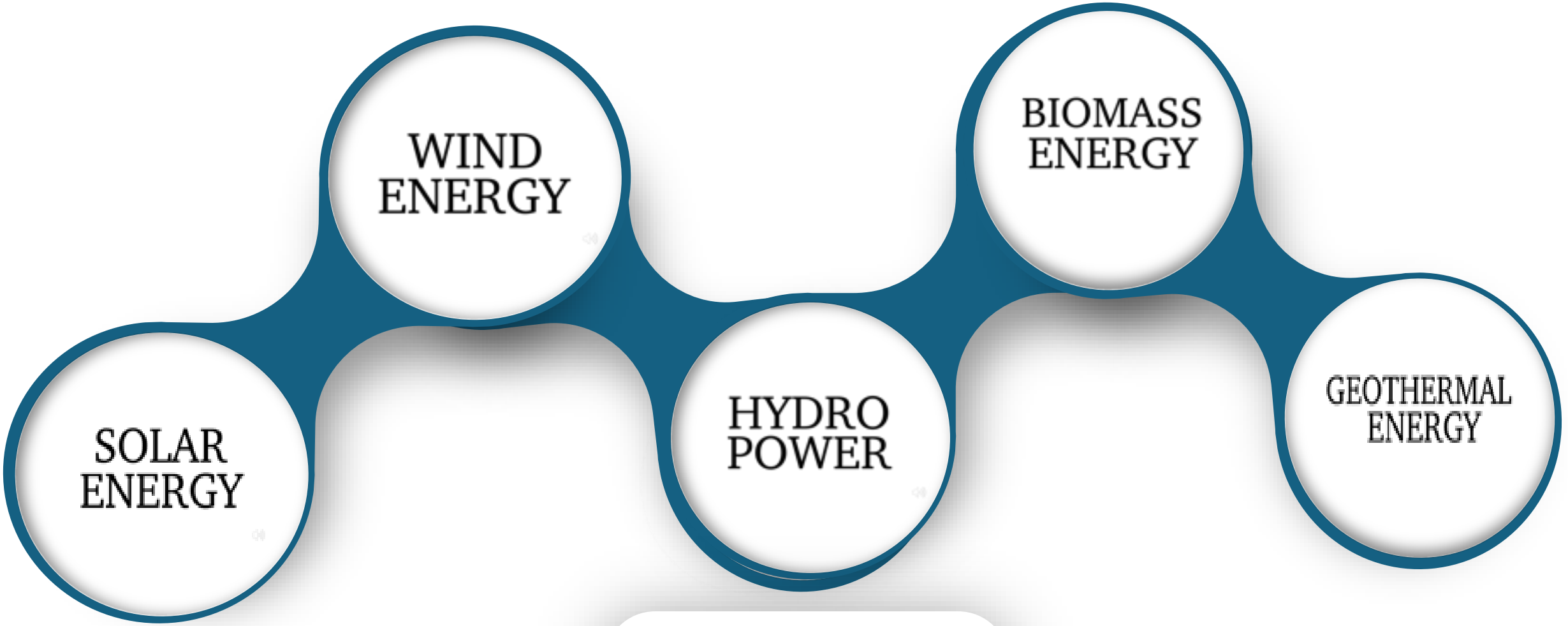

RENEWABLE ENERGY

Renewable energy refers to power generated from naturally replenishing resources like sunlight, wind, water, and biomass.

Rising concerns over climate change, depleting fossil fuels, and the need for sustainable development are driving the shift toward renewable energy.

The future is expected to focus on cleaner, more efficient, and affordable solutions.

TYPES OF RENEWABLE ENERGY



CONCLUSION

SOLAR ENERGY

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Source: Sunlight, captured through solar panels or solar thermal systems.
Advantages:
Inexhaustible as long as the sun exists.
Can be used for electricity (solar PV) and heating (solar thermal).
Low maintenance costs after installation.
Challenges:
Weather and time of day affect power generation.
Requires large space for large-scale production.

WIND ENERGY

WIND ENERGY

Source: Moving air, harnessed through wind turbines.

Advantages:

Clean and emission-free.

Cost-effective after initial setup.

Suitable for both onshore and offshore installations.

Challenges:

Wind speed variability affects consistency.

Requires suitable geographic locations.

HYDRO POWER

HYDRO POWER

Source: Flowing water (rivers, dams) used to turn turbines and generate electricity.

Advantages:

Reliable and steady power generation.

Can store energy in reservoirs for later use.

Supports flood control and irrigation.

Challenges:

Large dams can affect ecosystems and displace communities.

Requires significant upfront investment.

BIOMASS ENERGY

BIOMASS ENERGY

Source: Organic matter like wood, crop waste, and animal manure.

Advantages:

Uses waste materials, reducing landfill use.

Can produce electricity, heat, or biofuels.

Carbon-neutral if managed sustainably.

Challenges:

Can lead to deforestation if not controlled.

Emissions from burning still need to be managed.

GEOTHERMAL ENERGY

GEOTHERMAL ENERGY

Source: Heat stored beneath the Earth's surface.

Advantages:

Provides consistent, 24/7 power.

Low emissions.

Small land footprint compared to other renewables.

Challenges:

Limited to areas with geothermal activity.

High drilling costs.

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The future of renewable energy is bright, driven by innovation, environmental awareness, and global commitment to sustainability. By harnessing resources such as solar, wind, hydro, geothermal, and biomass, we can reduce dependence on fossil fuels, lower greenhouse gas emissions, and create a cleaner, healthier planet. With ongoing technological advancements and supportive policies, renewable energy will not only meet our energy needs but also play a key role in shaping a sustainable future for generations to come.